

Remarks

Reconsideration and allowance of the subject application are respectfully solicited.

Claims 1-29 remain pending in the application, with Claims 1, 14 and 21 being independent. Claims 1, 14 and 21 have been amended herein.

Claims 21-26 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,160,922 (Hayashi). This rejection is respectfully traversed.

As is recited in independent Claim 21, the present invention relates to a recording apparatus for performing binary recording on a recording medium by controlling binarizing means for binarizing input multi-level data and driving recording heads, with each recording head comprising a plurality of recording elements, according to a binary signal output by the binarizing means. The apparatus includes a plurality of density correcting table groups, means for selecting one density correcting table group and correcting means. The plurality of density correcting table groups correct input multi-level image data, with the density correcting table groups each comprising a plurality of correcting tables, each having a different correction amount and having different correction characteristics from each other. Corresponding tables from each table group differ in correction amount at a particular density level range. The selecting means selects one density correcting table group from the plurality of density correcting table groups. The correcting means corrects multi-level data by associating the multi-level data with a correcting table from the selected correcting table group according to a pixel address of a corresponding recording head for each pixel.

Support for the changes to Claim 21 can be found in the original specification at least at page 30, lines 13-23.

In the image forming apparatus of Hayashi, several steps are described for generating a tonality transform table for a Y correction 410. In Step S1 of Figure 5, the curvature of the entire image is selected utilizing several tonality transform tables. Hayashi describes at column 14, lines 20-30, generating tonality correction tables to match the situation when only thin sheets are used. However, there is no disclosure or suggestion in Hayashi of at least plural density correcting table groups with corresponding tables from each group differing in correction amount at a particular density level range, as is recited in independent Claim 21.

Thus, Hayashi fails to disclose or suggest important features of the present invention recited in independent Claim 21. Reconsideration and withdrawal of the § 102 rejection are requested.

Claims 1-5 and 9-20 were rejected under 35 U.S.C. § 103 as being unpatentable over Hayashi in view of U.S. Patent No. 6,697,167 (Takahashi). Claims 6-8 and 27-29 were rejected under § 103 in further view of U.S. Patent No. 6,439,683 (Matsumoto et al.). These rejections are respectfully traversed.

As recited in independent Claim 1, the present invention relates to a recording apparatus for recording an image on a recording medium by using a recording head in which a plurality of recording elements are arranged. The apparatus includes memory means, first forming means, first setting means, second forming means and second setting means. The memory means stores a first table group for correcting input multi-level

image data, with the first table group comprising a plurality of first correction tables and each first correction table having a different degree of correction, and a second table group comprising a plurality of second correction tables having correction characteristics which are different from correction characteristics of the first table group with respect to different density levels. The first forming means forms a first test pattern by the plurality of recording elements at a predetermined density. The first setting means sets test correction tables for making the densities of an image to be recorded by the plurality of recording elements uniform by associating first correction tables of the first table group with respective recording elements of the plurality of recording elements based on a result of reading the densities of areas of the first test pattern that correspond to the plurality of recording elements. The second forming means forms a second test pattern having a plurality of different density levels, with the second test pattern being recorded with the recording elements being corrected by the test correction tables set by the first setting means. The second setting means sets recording correction tables corresponding to each of the plurality of recording elements based on the second test pattern. The recording correction tables are selected from among the first table group and the second table group.

As recited in independent Claim 14, the present invention relates to a method for correcting nonuniformities in the density of an image recorded by a recording head having a plurality of recording elements arranged therein. The method includes the steps of forming a first test pattern by the plurality of recording elements at a predetermined density, and setting, in a first setting step, test correction tables for making the densities of an image to be recorded by the plurality of recording elements uniform by associating first

correction tables, which are from among a first table group for correcting input multi-level image data, with respective recording elements of the plurality of recording elements based on a result of reading densities of areas of the first test pattern that correspond to the plurality of recording elements. The method further includes the steps of forming a second test pattern having a plurality of different density levels, with the second test pattern being recorded with the recording elements being corrected by the test correction tables set in the first setting step, and setting, in a second setting step, recording correction tables corresponding to each of the plurality of recording elements based on the second test pattern. The recording correction tables are selected from among the first table group and a second table group comprising second correction tables having correction characteristics which are different from correction characteristics of corresponding first correction tables of the first table group with respect to different density levels.

As discussed previously, and as recognized by the Examiner, Hayashi does not form a second test pattern. Takahashi was cited for this deficiency. Takahashi describes an image processing apparatus utilizing two test prints, with test print 1 being used to determine a correction coefficient of contrast potential for image formation and not used to set test correction tables for making densities of an image to be recorded by plural recording apparatuses uniform. However, regardless of whether test print 1 in Takahashi can improve non-linear changes in density value with respect to a surface potential of a photosensitive drum, that test pattern is not comparable to the test pattern printed in Hayashi. That is, the test print in Hayashi and test print 1 in Takahashi are not used to perform the same function. One of ordinary skill in the art would not be motivated to pick

and choose test pattern 2 in Takahashi to be incorporated into the apparatus of Hayashi because test pattern 2 in Takahashi is used as a complement to test pattern 1 therein and would not be a complement to the test pattern in Hayashi. Moreover, while test prints 1 and 2 in Takahashi may be used to determine Υ conversion characteristics, recording correction tables are not selected from among first and second table groups that are used in conjunction with the first and second test patterns.

Accordingly, one of ordinary skill in the art would not combine Hayashi and Takahashi in the manner suggested by the Examiner, and even assuming, arguendo, that those two citations could be combined, the resulting combination would not suggest all the features recited in independent Claims 1 and 14.

Matsumoto et al. was cited for teaching the use of ink jet head units, but is not believed to remedy the deficiencies of the citations noted above with respect to independent Claims 1 and 14.

Thus, independent Claims 1 and 14 are also patentable over the citations of record. Reconsideration and withdrawal of the § 103 rejections are respectfully requested.

For the foregoing reasons, Applicant respectfully submits that the present invention is patentably defined by independent Claims 1, 14 and 21. Dependent Claims 2-13, 15-20 and 22-29 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims.

Individual consideration of the dependent claims is requested.

This Amendment After Final Rejection is an earnest attempt to advance prosecution and reduce the number of issues, and is believed to clearly place this application in condition for allowance. This Amendment was not earlier presented because Applicant earnestly believed that the prior Amendment placed the subject application in condition for allowance. Accordingly, entry of this Amendment under 37 CFR 1.116 is respectfully requested.

Applicant submits that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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